

Claims

1. A low Intermediate Frequency ('IF') radio receiver comprising antenna means (1) for receiving a slot-based radio signal comprising successive frames each comprising a set of reception time slots, input means (2) responsive to a signal from said antenna means for producing an input signal, local oscillator means (3, 5, 19) for producing at least one local oscillator signal (15) having a local oscillator frequency, mixer means (4, 6) for mixing said input signal with said local oscillator signal and producing an IF signal, and filter means (7, 8) responsive to said IF signal for selectively passing frequencies within a low IF range and rejecting frequencies outside said low IF range so as to produce a filtered signal,

characterised in that said local oscillator means (3, 5, 19) includes frequency alternation means (20) for causing said local oscillator frequency to alternate a plurality of times during said reception time slots of each of said frames between first and second values one of which is greater and the other smaller than the desired carrier frequency of the input signal.
2. A low IF radio receiver as claimed in claim 1, comprising further local oscillator means (12, 13) for producing at least one further local oscillator signal having a further local oscillator frequency, further mixer means (21 – 24, 26, 28) for mixing said filtered signal with said further local oscillator signal and producing a baseband signal, and filter means (27, 29) responsive to said baseband signal for selectively passing frequencies within a baseband frequency range and rejecting frequencies outside said baseband range.
3. A low IF radio receiver as claimed in claim 1, wherein said local oscillator means (3, 5, 19) comprises 'I' and 'Q' channels for producing respectively I and Q components of said local oscillator signal in phase quadrature, said mixer means includes I and Q mixer channels for mixing said input signal with said I and Q components of said local oscillator signal and producing respectively I and Q components of said IF signal, and said filter means (7, 8)

includes I and Q filter channels for producing I and Q components of said filtered signal, respectively.

4. A low IF radio receiver as claimed in claim 3, comprising further local oscillator means (12, 13) for producing I and Q further local oscillator signal components having a further local oscillator frequency, further mixer means (21 – 24, 26, 28) including I and Q further mixer channels for mixing said filtered signal with said I and Q further local oscillator signal components and producing I and Q components of said baseband signal, and I and Q filter means (27, 29) responsive to said I and Q components of said baseband signal for selectively passing frequencies within a baseband frequency range and rejecting frequencies outside said baseband range so as to produce I and Q components of said baseband signal, respectively.
5. A low IF radio receiver as claimed in claim 4, wherein said further local oscillator means (12, 13) includes phase alternation means (25) for applying alternating phase shifts to said I and Q further local oscillator signal components in synchronism with said local oscillator frequency alternations.
6. A low IF radio receiver as claimed in claim 5, wherein said phase alternation means (25) is arranged to alternate said I and Q further local oscillator signal components between said I and Q further mixer channels in synchronism with said local oscillator frequency alternations.
7. A low IF radio receiver as claimed in any preceding claim, wherein said frequency alternation means is arranged to alternate said local oscillator frequency between said first and second values at each successive reception time slot of each of said frames.